

LOW OVERHEAD MACHINE

ROOMLESS ELEVATOR CONFIGURATION

BACKGROUND OF THE INVENTION

5 This application relates to a unique placement of the elevator machine and the associated sheaves, and a unique mounting of the elevator car that results in a very low overhead space requirement.

Elevators typically include a car guided for vertical movement within an elevator hoistway. Typically, a machine drives a rope or belt around a number of
10 sheaves to connect and drive an elevator car and a connected counterweight. Historically, the machine was mounted in a room above the elevator hoistway. Thus, a good deal of additional space was required above the hoistway, which was undesirable.

More recently, so-called "machine roomless" elevators have been designed.
15 In such constructions, the machine is incorporated in a small space in the elevator hoistway. A separate room has not been required.

Typically, known machine roomless elevators have included sheaves that are non-parallel relative to each other, and relative to the drive sheave associated with the machine. This non-parallel configuration has been necessary to pass the belt or rope
20 over the several sheaves within the small envelope of space typically available. While machine roomless elevators are becoming more widely utilized, a complication is that non-parallel sheaves has sometimes resulted in twisting of the rope or belt. Moreover, non-parallel sheaves make it more difficult to move to newer types of belts such as very slim line belts. Twisting of such belts is even more detrimental than it is to
25 traditional ropes or belts.

In addition, one type of mount for an elevator car is a cantilever mount. In a cantilever mount, the car is mounted to guide structure at one side. The cantilever mount typically has been mounted on guide rails, through mount structure that is laterally between the guide rails. More recently, it has been proposed to mount the
30 elevator car to the laterally outward side of the guide rails.

26. Thus, the amount of space 42 required above the vertically uppermost part 40 of the car is very small compared to the prior art.

Although a preferred embodiment of this invention has been disclosed, a worker of ordinary skill in this art would recognize that modifications would come
5 within the scope of this invention. For that reason, the following claims should be studied to determine the true scope and content of this invention.